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# Arrhythmias

## CRYOBALLOON VERSUS RADIOFREQUENCY FOR PULMONARY VEIN RE-ISOLATION AFTER A FAILED INITIAL ABLATION PROCEDURE IN PATIENTS WITH PAROXYSMAL ATRIAL FIBRILLATION

Moderated Poster Contributions
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**Background:** Catheter ablation of paroxysmal atrial fibrillation (PAF) is associated with an important risk of early and late recurrence, necessitating repeat ablation procedures. The aim of this prospective randomized patient-blind study was to compare the efficacy and safety of cryoballoon (Cryo) versus radiofrequency (RF) ablation of PAF after failed initial RF ablation procedure.

**Methods:** Patients with a history of symptomatic PAF after a previous failed first RF ablation procedure were eligible for this study. Patients were randomized to Cryo or RF redo ablation. The primary endpoint of the study was recurrence of atrial tachyarrhythmia, including AF and left atrial flutter/tachycardia, after a second ablation procedure at 1 year of follow-up. All patients were implanted with a cardiac monitor to continuously track the cardiac rhythm. Patients with an AF burden (AF%) ≤0.5% were considered AF-free (Responders), while those with an AF% > 0.5% were classified as patients with AF recurrences (non-Responders).

**Results:** Eighty patients with AF recurrences after a first RF pulmonary vein isolation (PVI) were randomized to Cryo (N = 40) or to RF (N = 40). Electrical potentials were recorded in 77 mapped PVs (1.9 ± 0.8 per patient) in Cryo Group and 72 PVs (1.7 ± 0.8 per patient) in RF Group (P = 0.62), all of which were targeted. In Cryo group, 68 (88%) of the 77 PVs were re-isolated using only Cryo technique; the remaining 9 PVs were re-isolated using RF. In RF group, all 72 PVs were successfully re-isolated (P =0.003 vs. Cryo). By intention-to-treat, 23 (58%) RF patients were AF-free versus 17 (43%) Cryo patients on no antiarrhythmic drugs at 1 year (P = 0.06). Three patients had temporary phrenic nerve paralysis in the Cryo group; the RF group had no complications. Of the 29 patients who had only Cryo PVI without any RF ablation, 11 (38%) were AF-free versus 20 (59%) of the 34 patients who had RF only (P = 0.021).

**Conclusions:** When patients require a redo pulmonary vein isolation ablation procedure for recurrent PAF, RF appears to be the preferred energy source relative to Cryo.